

ABSTRACT OF THE DISCLOSURE

Systems and methods are provided for constructing a composite image having an extended depth of focus from a plurality of spatially congruent source images of lesser depth of focus. The systems and methods are relatively fast, preserve detail, provide robust results on a variety of unpredictable workpiece features and configurations, and tend to suppress or reduce out-of-focus artifacts. The composite image is constructed by edge and/or boundary analysis to identify well-focused edges or boundaries in the source images. Each particular edge or boundary in the composite image is determined based on the source image containing the best-focused instance of each particular edge or boundary. The composite image is constructed outside of the previously constructed portions by surface analysis to identify well-focused surfaces in the source images. Each particular surface portion in the composite image is determined based on the source image with the best-focused instance of each particular surface portion.